

Ubuntu Installation

Method 1: Install Ubuntu using VirtualBox (VM)

Step 1: Download and install VirtualBox

Download VirtualBox from:

VirtualBox: <https://www.virtualbox.org/wiki/Downloads>

Install it on your Windows PC.

Step 2: Download Ubuntu ISO

Download Ubuntu Desktop ISO:

Ubuntu 24.04.3 LTS: <https://ubuntu.com/download/desktop>

Save the **.iso** file.

Step 3: Create a new Virtual Machine

1. Open **VirtualBox**
2. Click **New**
3. Name: Ubuntu-Asterisk
4. Type: Linux
5. Version: Ubuntu (64-bit)
6. Click **Next**

Step 4: Allocate RAM & CPU

- RAM: **4 GB** (minimum 2 GB)
- CPU: **2 cores** (minimum 1 core)

Step 5: Create Virtual Hard Disk

- Select: **Create a virtual hard disk now**
- Type: **VDI**
- Storage: **Dynamically allocated**
- Size: **30 GB** (minimum 20 GB)

Step 6: Attach the Ubuntu ISO

1. Select your VM → **Settings**
2. Go to **Storage**
3. Under Controller (IDE/SATA) → click **Empty**
4. Click the CD icon → **Choose a disk file**
5. Select your Ubuntu **.iso**

Step 7: Network Setup (Important for phone SIP testing)

1. VM → **Settings** → **Network**
2. Adapter 1 → Attached to: **Bridged Adapter**

Step 8: Start Ubuntu Installation

1. Click **Start**
2. Choose **Try or Install Ubuntu**
3. Select Language → Continue
4. Choose **Normal installation**
5. Select **Erase disk and install Ubuntu** (this is only inside VM, safe)
6. Set timezone, keyboard layout
7. Create username + password
8. Click **Install**

Method 2: Install Ubuntu using Bootable USB (Real PC)

Step 1: Download Ubuntu ISO

Ubuntu 24.04.3 LTS: <https://ubuntu.com/download/desktop>

Step 2: Create Bootable USB

Use **Rufus** (Windows): <https://rufus.ie>

1. Select USB drive
2. Select Ubuntu ISO
3. Click Start

Step 3: Boot from USB

1. Restart PC
2. Press Boot Menu key (F12 / ESC / F9 / DEL depending on PC)
3. Select USB
4. Install Ubuntu normally

Asterisk Installation

Asterisk Installation (Ubuntu 24.04)

Step 1: Update the system

Open Terminal and run:

```
sudo apt update  
sudo apt upgrade -y
```

Step 2: Install required dependencies

These packages are needed for Asterisk to run properly.

```
sudo apt install -y wget curl gnupg2 lsb-release ca-certificates
```

Step 3: Install Asterisk from Ubuntu repository

Ubuntu provides a stable Asterisk package.

```
sudo apt install -y asterisk
```

This will automatically install:

- Asterisk core
- Required libraries
- System service files

Step 4: Check Asterisk version

Verify installation:

```
asterisk -V
```

Example output:

```
Asterisk 20.x.x
```

Step 5: Access Asterisk CLI

Enter the Asterisk command line interface:

```
sudo asterisk -rvv
```

Exit CLI anytime using:

```
exit
```

Step 6: Verify configuration directory

Asterisk configuration files are located in:

```
cd /etc/asterisk  
ls
```

Important files:

- `sip.conf`
- `extensions.conf`
- `voicemail.conf`
- `modules.conf`

Step 8: Network preparation (Important)

If using **VirtualBox**, make sure:

- Network Adapter = **Bridged Adapter**
- Ubuntu has a local IP like `192.168.x.x`

Check IP:

```
ip a
```

SIP Configuration (Asterisk)

This section provides configuration examples for SIP trunks and users in Asterisk.

The configuration files shown here are located in the `/etc/asterisk` directory.

For detailed information on Asterisk configuration, refer to the Asterisk documentation.

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SIP Configuration (Asterisk)

Before making any changes, it is **very important to take backups** of the default configuration files. This helps you restore the system if anything goes wrong.

Step 1: Backup existing configuration files

Open **Terminal** and run the following commands:

```
cd /etc/asterisk
```

Backup SIP configuration

```
sudo cp sip.conf sip.conf.bak
```

Backup Dialplan configuration

```
sudo cp extensions.conf extensions.conf.bak
```

Backup Voicemail configuration

```
sudo cp voicemail.conf voicemail.conf.bak
```

Step 2: Edit configuration files

You can edit files using **gedit (GUI editor)** or **nano (terminal editor)**.

Edit `sip.config`:

```
sudo gedit sip.conf
```

Copy and pest this code:

```
[general]
context=internal
allowguest=no
allowoverlap=no
bindport=5060
bindaddr=0.0.0.0
srvlookup=no
```

```
disallow=all
allow=ulaw
alwaysauthreject=yes
canreinvite=no
nat=yes
session-timers=refuse
localnet=192.168.0.0/255.255.255.0
```

```
[7001]
type=friend
host=dynamic
secret=7001
context=internal
```

```
[7002]
type=friend
host=dynamic
secret=7002
context=internal
```

This code for 2 client. If you need more client then add

```
[7003]
type=friend
host=dynamic
secret=7003
context=internal
```

Click save button and close file

Edit extensions.conf:

```
sudo gedit extensions.conf
```

Copy and pest this code:

```
[internal]
exten => _7XXX,1,Dial(SIP/${EXTEN},60)
same => n,Playback(vm-nobodyavail)
same => n,VoiceMail(${EXTEN}@main)
same => n,Hangup()

exten => _800X,1,VoiceMailMain(${EXTEN:1}@main)
same => n,Hangup()
```

Click save button and close file

Edit voicemail.conf:

```
sudo gedit voicemail.conf
```

Copy and paste this code:

```
[main]
7001 => 7001,User 7001
7002 => 7002,User 7002
7003 => 7003,User 7003
7004 => 7004,User 7004
```

Click save button and close file

Reload Dialplan

After saving `extensions.conf`:

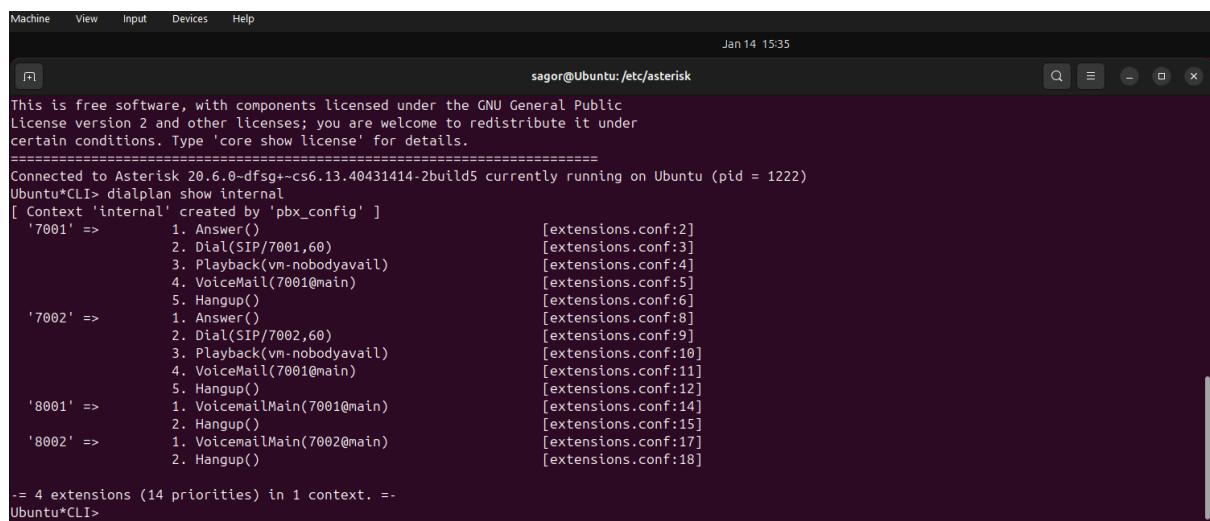
```
sudo asterisk -rvv
```

Inside CLI:

```
core reload
```

Verify:

```
dialplan show internal
```



The screenshot shows a terminal window titled 'sagor@Ubuntu: /etc/asterisk'. The window contains the following text:

```
Machine View Input Devices Help
Jan 14 15:35
sagor@Ubuntu: /etc/asterisk
This is free software, with components licensed under the GNU General Public
License version 2 and other licenses; you are welcome to redistribute it under
certain conditions. Type 'core show license' for details.
=====
Connected to Asterisk 20.6.0-dfsg+-cs6.13.40431414-2build5 currently running on Ubuntu (pid = 1222)
Ubuntu*CLI> dialplan show internal
[ Context 'internal' created by 'pbx_config' ]
  '7001' =>
    1. Answer() [extensions.conf:2]
    2. Dial(SIP/7001,60) [extensions.conf:3]
    3. Playback(vm-nobodyavail) [extensions.conf:4]
    4. VoiceMail(7001@main) [extensions.conf:5]
    5. Hangup() [extensions.conf:6]
  '7002' =>
    1. Answer() [extensions.conf:8]
    2. Dial(SIP/7002,60) [extensions.conf:9]
    3. Playback(vm-nobodyavail) [extensions.conf:10]
    4. VoiceMail(7001@main) [extensions.conf:11]
    5. Hangup()
  '8001' =>
    1. VoicemailMain(7001@main) [extensions.conf:14]
    2. Hangup()
  '8002' =>
    1. VoicemailMain(7002@main) [extensions.conf:17]
    2. Hangup()

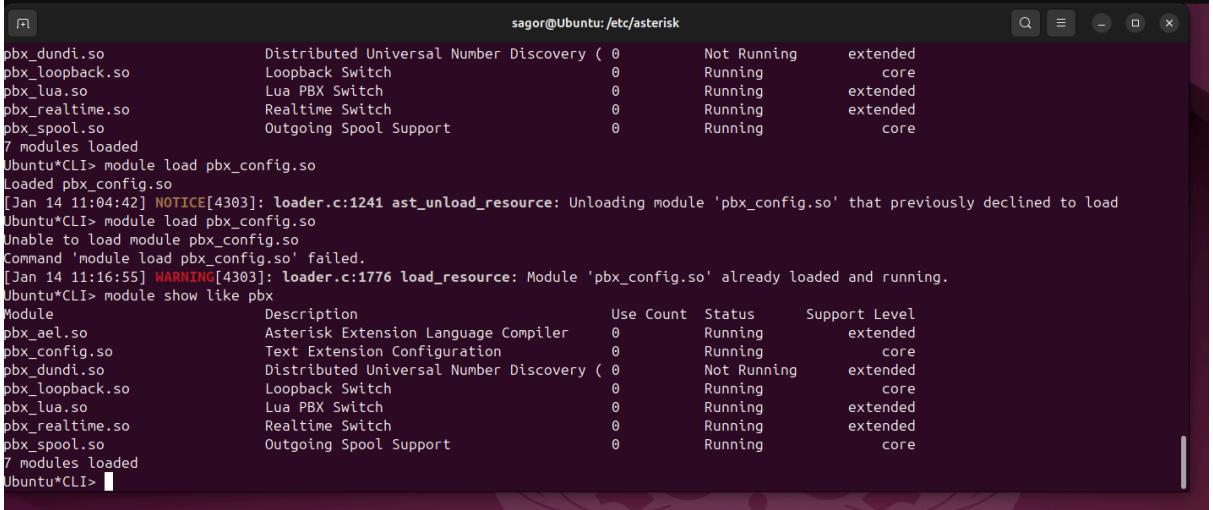
-= 4 extensions (14 priorities) in 1 context. =
Ubuntu*CLI>
```

If show this type of message then all set..

Another checking-

Inside **Asterisk CLI**, run:

```
module load pbx_config.so
```



```
sagor@Ubuntu:/etc/asterisk
pbx_dundi.so          Distributed Universal Number Discovery ( 0      Not Running    extended
pbx_loopback.so        Loopback Switch           0      Running       core
pbx_lua.so             Lua PBX Switch            0      Running       extended
pbx_realtime.so        Realtime Switch           0      Running       extended
pbx_spool.so           Outgoing Spool Support  0      Running       core
7 modules loaded
Ubuntu*CLI> module load pbx_config.so
Loaded pbx_config.so
[Jan 14 11:04:42] NOTICE[4303]: loader.c:1241 ast_unload_resource: Unloading module 'pbx_config.so' that previously declined to load
Ubuntu*CLI> module load pbx_config.so
Unable to load module pbx_config.so
Command 'module load pbx_config.so' failed.
[Jan 14 11:16:55] WARNING[4303]: loader.c:1776 load_resource: Module 'pbx_config.so' already loaded and running.
Ubuntu*CLI> module show like pbx
Module                  Description                   Use Count  Status     Support Level
pbx_ael.so              Asterisk Extension Language Compiler   0          Running    extended
pbx_config.so            Text Extension Configuration      0          Running    core
pbx_dundi.so            Distributed Universal Number Discovery ( 0      Not Running    extended
pbx_loopback.so          Loopback Switch           0      Running       core
pbx_lua.so               Lua PBX Switch            0      Running       extended
pbx_realtime.so          Realtime Switch           0      Running       extended
pbx_spool.so             Outgoing Spool Support  0      Running       core
7 modules loaded
Ubuntu*CLI>
```

successful now: pbx_config.so is Running.

Phone Software Setup

Phone Software Setup (Softphone Configuration)

To make calls using Asterisk, we need to install a **softphone** on a mobile phone or computer and configure it with SIP details.

Step 1: Download Phone (Softphone) Software

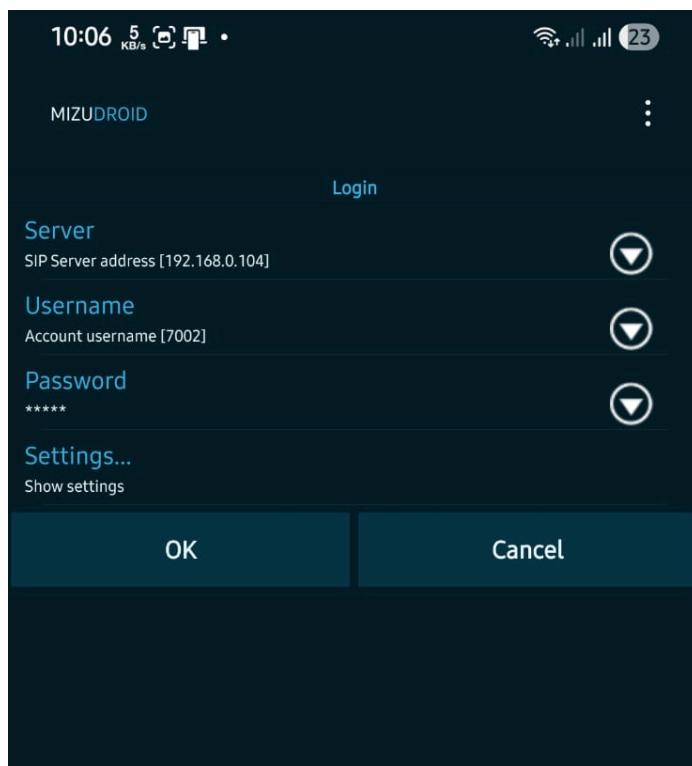
Android Mobile Phone

Download **MizuDroid** from Google Play Store:

<https://play.google.com/store/apps/details?id=com.mizupoip.mizudroid.app&hl=en>

Click the **three-dot (⋮) icon** → **Settings** → then set:

- **Server / Host:** Asterisk Server IP
- **Username:** 7001
- **Password:** 7001pass



Save the settings and wait until the account shows **Registered**.